



ecology and environment, inc.
International Specialists in the Environment

USEPA SF



1568891

6/93

ON-SCENE COORDINATOR'S
REPORT FOR:

KLICKITAT DRUM SITE
KLICKITAT, WASHINGTON

46

TDD T10-9210-013

REPORT PREPARED BY: ECOLOGY AND ENVIRONMENT, INC.
PROJECT MANAGER: JERYL T. KOLB
DATE: JUNE 1993

SUBMITTED TO CHRIS D. FIELD, DEPUTY PROJECT OFFICER
and CARL KITZ, ON-SCENE COORDINATOR
SUPERFUND RESPONSE AND INVESTIGATIONS BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
SEATTLE, WASHINGTON

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
ABSTRACT	
1.0 INTRODUCTION	1
2.0 SITE DESCRIPTION	2
2.1 Owner and Operator	2
2.2 Location	2
2.3 Operations and History	5
3.0 ENVIRONMENTAL SETTING	5
3.1 Geology	5
3.2 Surface and Groundwater Uses	6
4.0 PREVIOUS INVESTIGATIONS	6
5.0 CHRONOLOGY OF MAJOR EVENTS	7
6.0 REMOVAL ACTIVITIES	8
6.1 Removal Actions	8
6.1.1 Objectives and Strategy	8
6.1.2 Actions	9
6.1.3 On-site Container Descriptions	10
7.0 ENVIRONMENTAL SAMPLING	10
7.1 Safety Monitoring	10
7.2 Drum Sampling Activities	10
8.0 FINAL DISPOSITION	12
8.1 Summary of Removal Actions	12
8.2 Effectiveness of Removal Actions	12
8.3 Conclusions	12

REFERENCES

APPENDIX A: WASTE DISPOSAL LOCATION SUMMARY

LIST OF FIGURES AND TABLES

<u>Figure</u>		<u>Page</u>
1	Klickitat Drum Site Location Map	3
2	Oregon Drum Site Location Map	4
<u>Table</u>		<u>Page</u>
1	Container Inventory Klickitat Drum site	11
2	Container Inventory Oregon Drum site	11

ABSTRACT

The U.S. Environmental Protection Agency (EPA) initiated removal activities for the Klickitat Drum site on July 23, 1991. The removal involved approximately 300 55-gallon drums of paint and paint-related waste illegally disposed of in a cow pasture located near Klickitat, Washington, and was based on the results of site assessment activities conducted from June 5-13, 1991. The removal involved overpacking the containers to stabilize them and then transporting them to the treatment, storage, and disposal facility operated by Chemical Waste Management of the Northwest Inc. (CWM) in Arlington, Oregon. Due to criminal proceedings against the responsible parties, the drums were temporarily stored at CWM until court approval was received for disposal.

The EPA also initiated removal activities for the Oregon Drum site on July 29, 1991. This removal action involved overpacking and stabilizing approximately 500 containers ranging in size from 1-gallon to 55-gallons and originating from the same responsible party. After the containers had been discovered abandoned near Mollala, Oregon they were transported to the CWM facility for temporary storage. A site assessment of the containers was conducted at the facility from July 16-24, 1991. Once overpacked these containers were temporarily stored along with the overpacked containers from the Klickitat Drum site at the CWM facility, also pending court approval for disposal.

Following court approval, and based on the results of disposal profile samples collected on October 1, 1992, the containers from both sites were disposed of in January and February, 1993. The Klickitat Drum containers were accepted by CWM; solids were stabilized and landfilled at the Arlington, Oregon facility, while liquids were recycled at Oil and Solvent Process Co. (OSCO) in Azusa, California. Containers from the Oregon Drum site were accepted by both CWM and Burlington Environmental. Solids were stabilized and landfilled at Arlington and semi-solids were recycled by OSCO, while liquid wastestreams were recycled by Burlington at their Georgetown facility in Seattle, Washington.

KLICKITAT DRUM SITE OSC REPORT
KLICKITAT, WASHINGTON
TDD T10-9210-013

Site Name/Address:

Klickitat Drum Site
Wahkiacus Heights Road
Klickitat, Washington 98628

Chemical Waste Management of the Northwest, Inc.
Star Route, Box 9
Arlington, Oregon 97812

Participants:

Jeryl Kolb, TAT-Project Manager
Terri Haldeman, TAT Biologist
Jill Roberts, TAT Chemist
David Byers, TAT Chemist
John Felder, E & E Environmental Engineer
Ecology and Environment, Inc., Seattle, WA
206/624-9537

Carl Kitz, On-Scene Coordinator
U.S. Environmental Protection Agency
Seattle, WA 206/553-1671

Mike Taylor, ERCS Response Manager
Chris Marciniec, ERCS Foreman
Tim Ard, ERCS
CET Environmental Services Inc., Seattle, WA
206/525-9168

Removal Time Span:

July 23 to July 26, 1991
July 29 to July 30, 1991
October 1, 1992
January & February, 1993

1.0 INTRODUCTION

In May, 1991 the State of Washington Department of Ecology (WDOE) received an anonymous complaint concerning the presence of approximately 300 55-gallon drums located in a cow pasture near Klickitat, Washington. The WDOE contacted the United States Environmental Protection Agency (EPA) Region X Superfund Response and Investigations Section. The EPA then requested the assistance of the Ecology and Environment, Inc. (E & E) Region 10 Technical Assistance Team (TAT).

The TAT assisted in a multi-agency response on May 23, 1991, in which initial surveillance of the site was conducted. This visit documented the presence of 292 55-gallon drums containing paint-related wastes. The TAT returned to the site on June 5, 1991 to perform site assessment activities under TDD T10-9105-014. During the assessment, information provided to the EPA Office of Criminal Investigations (OCI) revealed that the Everett Steel Companies (Everett Steel), Everett, Washington was potentially responsible for the illegal disposal of the drums.

In July, 1991 approximately 500 containers of various sizes were discovered abandoned near Mollala, Oregon. Everett Steel was identified as being potentially responsible for these containers as well. The OCI made arrangements for the Oregon State Patrol to transport the containers to the Chemical Waste Management of the Northwest Inc. (CWM) treatment, storage, and disposal facility located in Arlington, Oregon. The TAT conducted site assessment activities under TDD T10-9107-015 on these containers at the CWM facility.

Based on the findings of these site assessments, the EPA initiated removal activities for both sites. In the case of the Klickitat Drum site this included transporting the drums to the CWM facility for temporary storage alongside the containers from the Oregon Drum site. Removal activities for both sites were conducted under TDD T10-9105-021 and were referred to as the Klickitat Drum site.

2.0 SITE DESCRIPTION

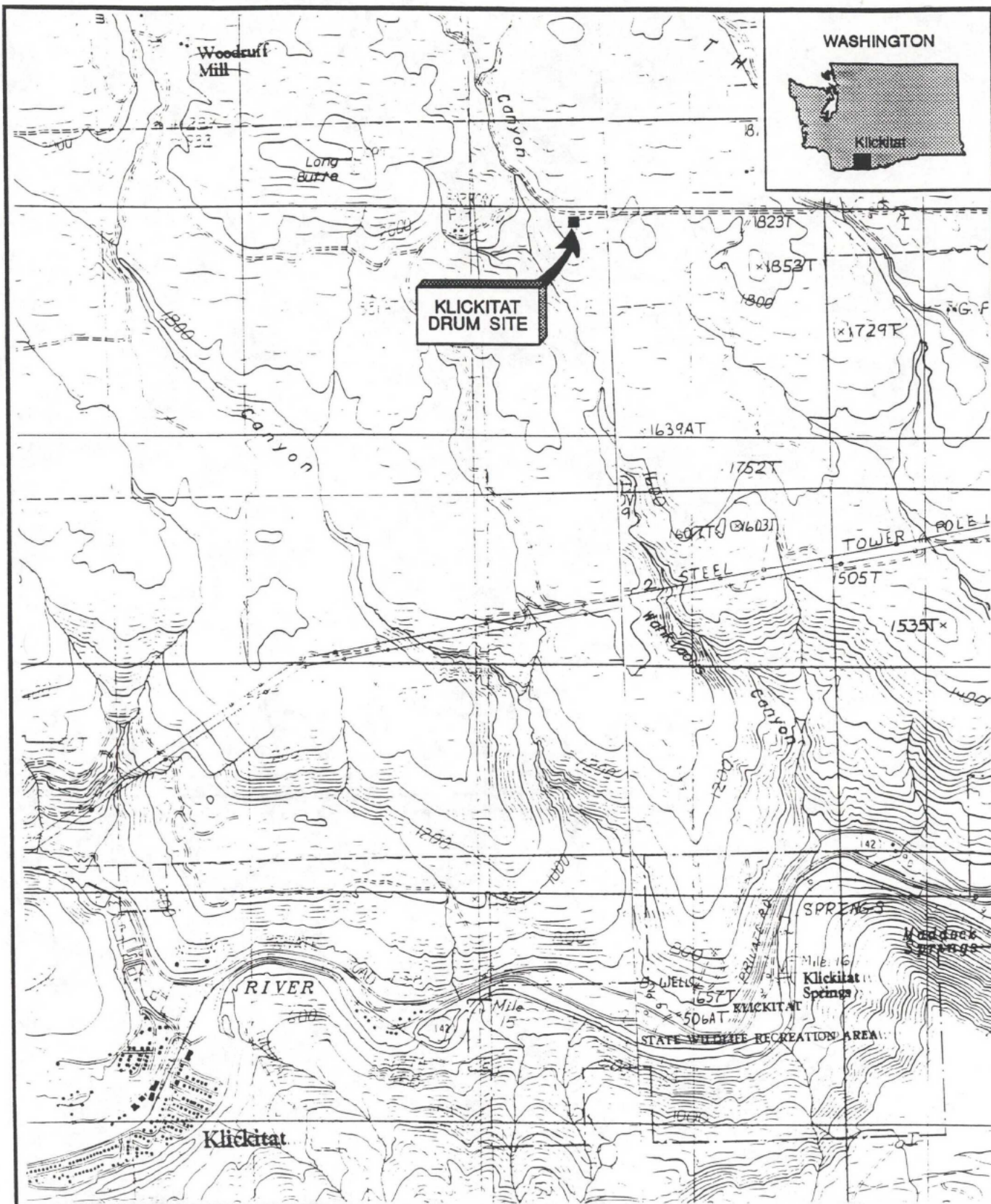
2.1 Owner and Operator

The party originally responsible for generating the waste from both sites has been identified as Everett Steel, who arranged for illegal transport and disposal of the wastes with an independent trucking firm (Seattle Post-Intelligencer 1992). A portion of the wastes were dumped in a cow pasture northeast of Klickitat, Washington and owned by Mr. Ralph Long. (b) (6) allegedly accepted the containers for disposal on the property.

The CWM facility in Arlington, Oregon is currently licensed by the EPA and the Oregon Department of Environmental Quality for hazardous waste treatment and disposal.

2.2 Location

The cow pasture is approximately 40 acres in size and described as the southeast 1/4 of the northwest 1/4 of Section 12, Township 4 North, Range 13 East (USGS 1983)(Figure 1). The site is located in a rural area of Klickitat County, Washington, with the town of Wahkiakus located approximately four miles southeast. The pasture in which the drums were discovered is surrounded by private property, with no adjacent homes. There are fewer than 20 residences within a 1-mile radius of the site.



ecology and environment, inc.
International Specialists in the Environment
Seattle, Washington

KLICKITAT DRUM SITE **Klickitat, Washington**



BASE MAP REFERENCE:
USGS 7.5 Quad 1983
Wahkiacus, Wa. / Klickitat, Wa.
Scale 1:24,000

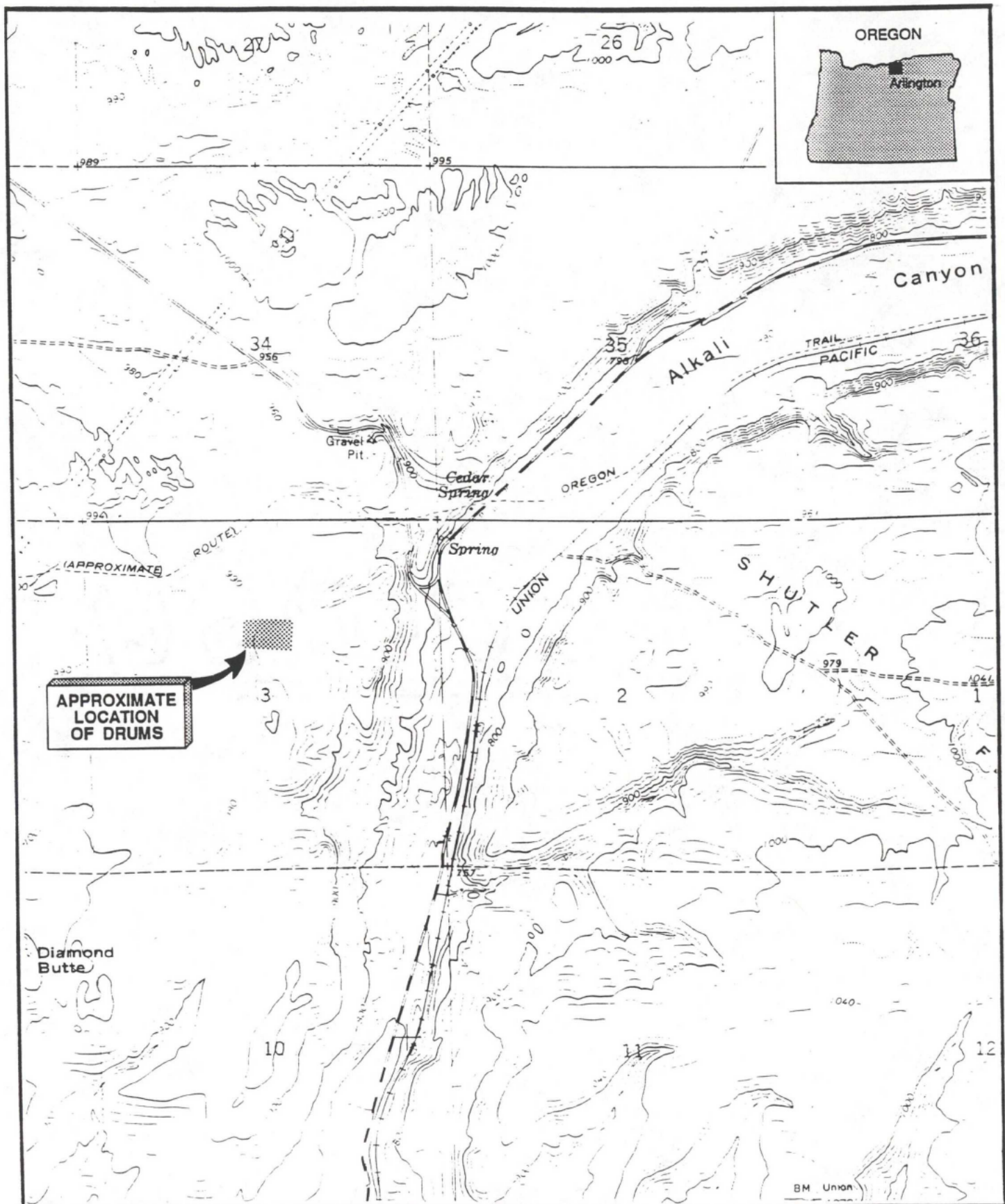
Drawn By:
AES

Date
1-21-93

TDD/Job No.
T10-9210-013

Dwg. No.
1322LM

Figure 1
KLICKITAT DRUM
LOCATION MAP



ecology and environment, inc.
International Specialists in the Environment
Seattle, Washington

OREGON DRUM SITE Arlington, Oregon



BASE MAP REFERENCE:
USGS 7.5 Quad
Turner Butte, Oregon 1975
Scale 1:24,000

Figure 2 LOCATION MAP

Drawn By:	Date	TDD/Job No.	Dwg. No.
AES	2-8-93	T10-9210-013	1664LM

The CWM facility is located approximately five miles south of Arlington, Oregon in Gilliam County (Figure 2) and is described as Section 3, Township 1 North, Range 20 East (USGS 1964). The surrounding area is rural in nature and sparsely populated. The containers were stored at an area inside the facility and were not adjacent to any residential homes.

2.3 Operations and History

Criminal investigations have shown that Everett Steel hired an independent trucking firm to illegally transport and dispose of paint-related waste at the Klickitat site with the illicit approval of Mr. Merlin Long, (b)(6) (Seattle Times 1992).

During transport of the last load of waste to Klickitat, the driver of the tractor trailer observed helicopters overhead and, thinking he might be under police surveillance, drove to his home base in Mollala, Oregon instead. The trailer containing the wastes was unhooked and abandoned until it was discovered and reported to the Oregon State Patrol, who then notified EPA Region X (E & E 1992a).

3.0 ENVIRONMENTAL SETTING

3.1 Geology

The Columbia Plateau covers an area in eastern Washington, north-central and northeastern Oregon, and western Idaho more than 70,000 square miles in size. The plateau is a large basin underlain chiefly by basalt belonging to the Columbia River Basalt Group. The major aquifer is a plateau-wide system that consists primarily of great thicknesses of Columbia River basalt, minor interbedded sedimentary materials, and and of overlying undivided sediments. This system has been divided into four hydrogeologic units, from oldest to youngest: the Grande Ronde, Wanapum, Saddle Mountains, and overburden units (USGS 1990a).

This system underlies both the sites in Klickitat, Washington and Arlington, Oregon. The Klickitat site is directly underlain by the Wanapum hydrogeologic unit which attains a thickness of approximately 600 feet in the area (USGS 1990). Logs of domestic wells drilled in the area of the site indicate artesian conditions with water bearing strata ranging in depth from 30 to 575 feet below ground surface and all consisting of Wanapum basalt (WDOE 1972-1989).

The CWM facility in Arlington, Oregon is situated atop the overburden hydrogeologic unit, which attains a thickness of approximately 300 feet in the area of the facility (USGS 1990). More specifically, this unit consists of semi-consolidated to well consolidated mostly lacustrine tuffaceous sandstone, siltstone, concretionary claystone, pumicite, diatomite, vitric ash, palagonitic tuff, and tuff breccia (USGS 1977).

3.2 Surface and Groundwater Uses

The Columbia Plateau aquifer system is the major source of groundwater for municipal, industrial, domestic, and irrigation purposes in the region. In addition to this groundwater usage, surface water is imported for irrigation in several areas. This type of heavy use has resulted in rises of groundwater levels in those areas where imported surface water is used, and declines of up to 100 feet in areas of groundwater pumpage. In addition, changes in the chemical quality of groundwater where it is used for irrigation have resulted (USGS 1990).

4.0 PREVIOUS INVESTIGATIONS

On May 23, 1991 a multi-agency response was conducted at the Klickitat site following an anonymous complaint to the WDOE. The respondents included Mr. Jerry French, the WDOE Spill Response Manager, Mr. Kevin Brown and five crew members from Olympus Environmental Inc., the WDOE's contractor, OCI representatives Mr. Dixon McClary and Mr. Gerd Hatwig, EPA On-Scene Coordinator (OSC) Mr. Thor Cutler, two TAT members, and Klickitat County Sheriff Ms. Karen von Borstel.

During the response approximately 300 55-gallon drums in poor to fair condition were observed situated in a cow pasture. Examples of drum contents were slag-like material, welding rods, and bright orange paint. Labels and other markings indicated materials such as zinc chromate, toluene, "dry solids," "floor sweepings," and "liquid slop"; labels indicating "hazardous waste" were present on many of the drums. At this point the WDOE asked the EPA to assume the lead in conducting further site activities.

OSC Mr. Carl Kitz and the TAT returned to the site on June 5, 1991 to conduct drum sampling and waste characterization activities. A total of 287 samples were collected from 292 containers and, following hazard categorization, 14 composite samples were formed from 83 of the samples. These samples were submitted to a commercial laboratory for analysis.

This analysis revealed that, generally, the liquid samples contained percent levels of volatile organic compounds (VOCs), with toluene concentrations ranging from 29 parts per million (ppm) to 298,000 ppm. Xylenes were present in the liquids at concentrations ranging from undetected at 2.5 ppm to 131,000 ppm. The solid samples contained percent levels of total zinc and lead with zinc concentrations ranging from 130,000 ppm to 425,000 ppm and lead concentrations ranging from 3,300 ppm to 118,000 ppm. However, all the solid samples were below the Toxics Characteristic Leaching Procedure (TCLP) regulatory limits for TCLP metals (E & E 1992b).

Information discovered during this sampling activity aided OCI in identifying Everett Steel as one of the parties responsible for the illegal disposal of the drums.

On July 16, 1991 the EPA tasked the TAT to conduct assessment activities on approximately 500 additional containers discovered abandoned by Everett Steel near Mollala, Oregon. These containers ranged in size from 1 gallon to 55 gallons. Arrangements were made by the EPA for the containers to be transported from Mollala to the CWM facility in Arlington, Oregon. CWM agreed to provide a location on the facility to perform assessment work and to temporarily store the containers until disposal could be finalized.

Assessment activities consisted of container sampling and hazard characterization. A total of 134 samples were collected from 514 containers. The samples were then consolidated into 15 composite groups following hazard categorization and sent to a commercial laboratory for analysis.

These samples also contained percent levels of VOCs, with toluene concentrations ranging from undetected at 2.0 ppm to 91,000 ppm. Xylene concentrations ranged from undetected at 2.0 ppm to 150,000 ppm. While two of the solid samples exhibited high concentrations of zinc (410,000 ppm and 290,000 ppm), none of the solid samples exceeded regulatory limits for TCLP metals (E & E 1992a).

5.0 CHRONOLOGY OF MAJOR EVENTS

May, 1991: The WDOE received an anonymous complaint concerning the presence of 55-gallon drums disposed of in a cow pasture near Klickitat, Washington.

May 23, 1991: A multi-agency response to the complaint was initiated. The respondents observed approximately 300 55-gallon drums in poor to fair condition situated in the cow pasture. Numerous labels and other markings, including "hazardous waste" were documented on the drums.

June 5-13, 1991: The EPA and the TAT returned to the site to conduct drum sampling and waste characterization activities. A total of 287 samples were collected from 292 containers and, following hazard categorization, 14 composite samples were formed from 83 of the samples and sent to a commercial laboratory for analysis. It was during this effort that Everett Steel was identified as the responsible party.

July 16-24, 1991: The EPA tasked the TAT to conduct assessment activities on approximately 500 additional containers discovered abandoned by Everett Steel near Mollala, Oregon. Arrangements were made by the OCI for the containers to be transported from Mollala to the CWM facility located in Arlington, Oregon. CWM agreed to provide a location on the facility to perform assessment work and to temporarily store the containers until disposal could be finalized. During the assessment a total of 134 samples were collected from 514 containers ranging in size from 1-gallon cans to 55-gallon drums. Following hazard categorization the samples were consolidated into 15 composite groups and submitted to

a commercial laboratory for analysis. Based on the findings of both this assessment and the June 5-13, 1991 assessment near Klickitat, Washington, Everett Steel, the president and two vice-presidents of the company, and three other defendants were indicted (McClary 1993).

July 23-26, 1991: The EPA, the TAT, and the Emergency Response Clean-up Services (ERCS) contractor returned to the Klickitat site. A total of 285 55-gallon drums were overpacked into 85-gallon drums and transported to the CWM facility in Arlington, Oregon, along with seven additional 55-gallon drums of waste not overpacked and four 85-gallon drums of investigation-derived waste. The work was done under TDD T10-9105-021. CWM agreed to provide temporary storage for the Klickitat drums alongside the Oregon Drums until disposal facilities could be located.

July 29-30, 1991: The TAT and the ERCS returned to the CWM facility to overpack the Oregon Drum site containers. Once containment activities were completed the containers were left at the CWM facility until disposal arrangements could be made.

January, 1992: All seven of the entities indicted were charged with criminal violations. Everett Steel, the president and two vice-presidents pled guilty to the charges (McClary 1993).

May, 1992: The remaining three defendants also pled guilty to the charges filed against them (McClary 1993).

June, 1992: Everett Steel was given 5 years probation and ordered to pay \$500,000 in restitution. The president and two vice-presidents received 1 year in prison each, and of the three remaining defendants, two were sentenced to 6 months in prison and 3 years probation, and the third to 6 months in prison and 1 year probation (McClary 1993).

October 1, 1992: The TAT and the ERCS revisited the CWM facility to conduct disposal profile sampling for both the Klickitat Drum and Oregon Drum sites under TDD T10-9210-043. All profile samples were handled by ERCS and were delivered to selected disposal firms for analysis.

January and February, 1993: Following acceptance for disposal the containers for both sites were either stabilized and landfilled or recycled by CWM, or recycled by Burlington Environmental according to wastestream.

6.0 REMOVAL ACTIVITIES

6.1 Removal Actions

6.1.1 Objectives and Strategy

The purpose of the removal actions taken were to consolidate the containers from the two sites, mitigate possible public health and

environmental effects, and eventually dispose of the containers in a proper manner.

6.1.2 Actions

From July 23 through July 26, 1991 the TAT and the ERCS overpacked and removed the 55-gallon drums located in the cow pasture near Klickitat. A total of 285 of the 55-gallon drums containing waste were overpacked into 85-gallon drums. Seven additional 55-gallon drums were deemed intact and were not overpacked. This total of 292 drums plus four 85-gallon drums containing investigation-derived waste were transported to the CWM facility in Arlington, Oregon. Containers from the Oregon Drum site had already been transported to this facility.

On July 29 and 30, 1991 the TAT and the ERCS returned to the CWM facility to overpack containers from the Oregon Drum site. This action was prompted by personnel at the facility who were concerned with the integrity of the containers while in storage there.

All the 1-gallon containers were placed in a large dumpster container that was part of the original load. A 2-gallon and a 5-gallon container were also placed in the dumpster.

A total of 35 55-gallon drums were placed in 85-gallon overpack drums. Seven of these were drums from the Klickitat site not overpacked prior to transport to the CWM facility. A 15-gallon drum was overpacked into a 55-gallon drum, and all the 5-gallon containers were placed into 55-gallon overpack drums according to composite group to avoid incompatibility.

During the overpacking activities two 5-gallon containers fell off the pallet they were on as it was being reloaded onto a trailer. Approximately 10 gallons of product were released, and this, plus 30 additional gallons of surrounding soil and gravel, were removed and placed in a 55-gallon overpack drum.

The TAT and the ERCS revisited the CWM facility on October 1, 1992 to collect disposal profile samples from the containers. While identifying drums for each of the 14 Klickitat Drum site composite groups, an 85-gallon drum containing hazard categorization samples from the assessment was located. It was decided to use these samples to collect the eight profile samples. Five of the profile samples were collected using these hazard categorization samples, which corresponded to the drums of waste they were collected from. The remaining three profile samples were then collected from the overpacked 55-gallon drums of waste themselves.

The 15 profile samples for the Oregon Drum site were collected primarily from duplicates of the 15 composite samples collected during site assessment activities. Profile samples for both sites were delivered to selected disposal firms for analysis by the ERCS.

During January and February, 1993 the containers from both sites were sorted by the ERCS according to wastestream and then transported to selected locations for disposal. The Klickitat Drum containers were accepted by CWM; solids, sludges, and semi-solid paints were stabilized and disposed of at the Arlington, Oregon facility. Paints and other liquids were transported to CWM's Oil and Solvent Process Co. (OSCO) in Azusa, California for recycling and fuel blending.

Containers from the Oregon Drum site were accepted by CWM and by Burlington Environmental. Solid wastestreams were stabilized and disposed of at Arlington and sludges recycled at OSCO by CWM. Liquid waste streams were transported to Burlington's Georgetown facility located in Seattle, Washington for recycling and fuel blending. Appendix A lists the wastestreams for both sites by composite sample number and their disposal locations. The Site Assessment Reports for both sites produced by the TAT lists the compositions of these groups (E & E 1992a, 1992b).

6.1.3 On-site Container Descriptions

See Tables 1 and 2 for inventories of the containers from both sites. These containers were overpacked, transported to, and stored at the CWM facility pending the finalization of disposal procedures.

7.0 ENVIRONMENTAL SAMPLING

7.1 Safety Monitoring

Details of safety plans prepared by both the TAT and the ERCS were reviewed and discussed during safety meetings conducted prior to the start of removal activities. The ERCS performed overpacking activities and opening of the drums in Level B protection and the TAT collected profile samples in Level C protection. Air monitoring was conducted using a Century OVA-128 portable organic vapor analyzer (OVA).

7.2 Drum Sampling Activities

The TAT and the ERCS collected profile samples of the drums on October 1, 1992. While identifying drums for each Klickitat Drum site composite group, an 85-gallon drum containing hazard categorization samples from the site assessment was located. It was decided to use these samples to collect the eight profile samples. Five of the profile samples were collected using these hazard categorization samples, which corresponded to the drums of waste they were collected from. The remaining three profile samples were then collected from the overpacked 55-gallon drums of waste themselves.

The 15 profile samples for the Oregon Drum site were collected primarily from duplicates of the 15 composite samples collected during site assessment activities. Profile samples for both sites were given to the ERCS by the TAT and subsequently delivered to selected disposal firms for profile analysis.

TABLE 1
CONTAINER INVENTORY
KLICKITAT DRUM SITE
JULY 23-26, 1991

285	55-gallon drums of paint-related wastes overpacked into 85-gallon drums.
7	55-gallon drums of paint-related waste deemed intact and not overpacked.
4	85-gallon drums of investigation-derived waste (hazard characterization samples, protective clothing, ect.)

TABLE 2
CONTAINER INVENTORY
OREGON DRUM SITE
JULY 29-30, 1991

28	55-gallon drums overpacked into 85-gallon drums.
1	85-gallon drum containing Avco Chartek 59A
69	17-H type 55-gallon drums containing 5-gallon containers.
8	17-H type 55-gallon drums containing investigation-derived waste from the Klickitat Drum site.
4	85-gallon drums containing investigation-derived waste from the Oregon Drum site.
1	85-gallon drum from the Oregon Drum site assessment containing decontamination water.
1	17-H type 55-gallon drum containing spilled product, gravel soils from the spill that occurred during overpacking.
7	55-gallon drums of paint-related waste from the Klickitat Drum site overpacked into 85-gallon drums.

8.0 FINAL DISPOSITION

8.1 Summary of Removal Actions

From July 23-26, 1991 a total of 285 drums were overpacked at the Klickitat Drum site. These plus an additional 11 55-gallon drums not overpacked were transported to the CWM facility for temporary storage.

All the containers from the Oregon Drum site were overpacked at the CWM facility from July 29-30, 1991. These included the 11 drums from the Klickitat Drum site that were not overpacked earlier.

Disposal profile sampling for both sites was conducted at the CWM facility on October 1, 1992. Eight profile samples from the Klickitat Drum site and 15 profile samples from the Oregon Drum site were sent to selected disposal firms for profile analysis.

During January and February, 1993 the containers from both sites were sorted according to wastestream and disposed of or recycled. Solid, sludge, and semi-solid paint wastestreams from the Klickitat Drum site were stabilized and landfilled at the CWM facility in Arlington, Oregon. Liquid waste streams were recycled or fuel blended at OSCO in Azusa, California. Solid wastestreams from the Oregon Drum site were stabilized and landfilled by CWM at Arlington, sludges were transported to and recycled by CWM at OSCO, and liquids were transported to and recycled at Burlington's Georgetown facility in Seattle, Washington.

8.2 Effectiveness of Removal Actions

By overpacking and removing all containers from the Klickitat Drum site and storing them temporarily at the CWM facility, hazards to both the public and the surrounding environment were reduced. The containers were stabilized and then removed from the Klickitat site, effectively eliminating any threats represented by their presence. By transporting them to the CWM facility, temporary storage was conducted in a manner and at a location so as to reduce the threat to this area as well.

Potential threats represented by the Oregon Drum site containers were minimized in the same way. By transporting them immediately to the CWM facility and then overpacking and temporarily storing them there, both threats to the public and the surrounding environment were reduced. Sampling by the TAT identified the responsible party by locating documents in one of the drums at the Klickitat Drum site.

8.3 Conclusions

The removal actions conducted for both the Klickitat Drum and Oregon Drum sites successfully stabilized and removed approximately 800 containers from the locations where they were discovered illegally abandoned. These containers ranged in size from 1 gallon to 55 gallons and contained mixed paint wastes. Containers from both sites were transported to the CWM facility in Arlington, Oregon for temporary storage until disposal arrangements could be finalized.

Immediate threats to the public and the surrounding environment were mitigated by the stabilization and removal of the drums from the locations where they were discovered. In transporting them to the CWM facility the containers were stored at a location and in such a manner as to prevent these threats from recurring at this location. And with the eventual removal and disposal of the containers, these potential threats have been eliminated.

Sampling of the waste at the Klickitat, Washington site also aided in identifying the parties responsible for the illegal disposal. As a result, seven defendants were indicted, charged, and pled guilty to criminal violations. Everett Steel Corporation was ordered to pay \$500,000 in restitution, and the president and two vice-presidents of the company were each sentenced to 1 year prison terms.

REFERENCES

Ecology and Environment, Inc. (E & E), 1992a, Technical Assistance Team Site Assessment Final Report For: Oregon Drum Site, Arlington, Oregon, prepared for the U.S. Environmental Protection Agency, Seattle, Washington.

_____, 1992b, Technical Assistance Team Site Assessment Final Report For: Klickitat Drum Site, Klickitat, Washington, prepared for the U.S. Environmental Protection Agency, Seattle, Washington.

McClary, Dixon, May 4, 1993, U.S. EPA, Office of Criminal Investigations, Seattle, Washington, telephone conversation with Jeryl Kolb, Ecology and Environment, Inc., Seattle, Washington.

Seattle Post-Intelligencer, January 22, 1992, "Guilty Pleas in Hazardous-Waste Case", Seattle, Washington.

Seattle Times, June 16, 1992, "Father, Sons sentenced to year for dumping hazardous waste", Seattle, Washington.

United States Geological Survey (USGS), 1964, Turner Butte, Oregon, 7.5 Minute Series, Photoinspected in 1975.

_____, 1977, Geologic Map of Oregon East of the 121st Meridian, Sheet 1 of 2 and Sheet 2 of 2, by George W. Walker, prepared in cooperation with the Oregon Department of Geology and Mineral Industries.

_____, 1983, Klickitat, Washington, 7.5 Minute Series, Provisional Edition.

_____, 1983, Wahkiacus, Washington, 7.5 Minute Series, Provisional Edition.

_____, 1990, Geologic Framework of the Columbia Plateau Aquifer System, Washington, Oregon, and Idaho, Water-Resources Investigations Report 87-4238, includes Sheets 1 of 10, 5 of 10, and 10 of 10, by B.W. Drost, K.J. Whiteman, and J.B. Gonthier, Portland, Oregon.

Washington Department of Ecology (WDOE), 1972-1989, Water Well Reports, Section 12, Township 4 North, Range 13 East.

APPENDIX A

WASTE DISPOSAL LOCATION SUMMARY

KLICKITAT DRUM SITE

<u>Composite Sample Number</u>	<u>Disposal Location</u>
T1060593 - Liquid	OSCO
T1060594 - Liquid/Paint	OSCO
T1060595 - Liquid/Paint	OSCO
T1060596 - Liquid	OSCO
T1060597 - Liquid	OSCO
T1060598 - Paint Sludge	Arlington
T1060599 - Liquid/Paint	OSCO
T1060600 - Paint Sludge	Arlington
T1060601 - Solids/Sludges	Arlington
T1060602 - Solids/Sludges	Arlington
T1060603 - Solids	Arlington
T1060604 - Solids	Arlington
T1060605 - Solids	Arlington
T1060607 - Solids	Arlington

OREGON DRUM SITE

<u>Composite Sample Number</u>	<u>Disposal Location</u>
T1070155 - Liquids	Georgetown
T1070156 - Liquids	Georgetown
T1070157 - Liquids	Georgetown
T1070158 - Sludges	OSCO
T1070159 - Liquids	Georgetown
T1070160 - Sludges	OSCO
T1070161 - Liquids	Georgetown
T1070162 - Solids	Arlington
T1070163 - Liquids	Georgetown
T1070164 - Sludges	OSCO
T1070165 - Solids	Arlington
T1070166 - Solids	Arlington
T1070167 - Solids	Arlington
T1070168 - Solids	Arlington
T1070169 - Solids	Arlington